

## Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área Corte	Área Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
0	1,831	0,147					
			8,972	30,153	30,153	1,561	1,561
0+17,943	1,530	0,027					
			0,001	0,003	30,156	0,000	1,561
0+17,945	1,539	0,028					
			1,028	3,106	33,262	0,084	1,645
1	1,484	0,054					
			8,973	26,397	59,659	3,383	5,028
1+17,945	1,458	0,323					
			1,028	2,974	62,633	0,586	5,614
2	1,436	0,247					
			4,305	14,941	77,574	2,819	8,433
2+8,609	2,035	0,408					
			5,696	23,403	100,977	3,782	12,215
3	2,074	0,256					
			2,377	10,219	111,196	0,608	12,823
3+4,753	2,226	0,000					
			7,624	33,353	144,549	0,000	12,823
4	2,149	0,000					
			9,553	37,524	182,073	5,054	17,877
4+19,106	1,779	0,529					
			0,447	1,578	183,651	0,539	18,416
5	1,751	0,677					
			1,592	5,435	189,086	3,234	21,650
5+3,183	1,664	1,355					
			8,409	27,437	216,523	12,941	34,591
6	1,599	0,184					
			10,000	27,010	243,533	7,360	41,951
7	1,102	0,552					
			1,592	3,473	247,006	1,455	43,406
7+3,183	1,080	0,362					
			8,409	24,603	271,609	3,313	46,719
8	1,846	0,032					

	Corte	Aterro
Áreas	28,5830 m <sup>2</sup>	5,181 m <sup>2</sup>
Volumes	271,609 m <sup>3</sup>	46,719 m <sup>3</sup>

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Estaca	Área Corte	Área Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
0+3,300	3,743	0,000					
			8,350	64,930	64,930	0,000	0,000
1	4,033	0,000					
			8,733	43,464	108,394	4,419	4,419
1+17,466	0,944	0,506					
			1,267	2,099	110,493	1,539	5,958
2	0,713	0,709					
			3,953	6,510	117,003	4,759	10,717
2+7,905	0,934	0,495					
			6,048	8,291	125,294	8,757	19,474
3	0,437	0,953					
			9,836	11,134	136,428	19,436	38,910
3+19,672	0,695	1,023					
			0,164	0,232	136,660	0,332	39,242
4	0,720	1,004					
			4,569	9,869	146,529	13,903	53,145
4+9,138	1,440	2,039					
			5,431	17,097	163,626	12,155	65,300
5	1,708	0,199					
			1,750	6,540	170,166	0,522	65,822
5+3,500	2,029	0,099					
			0,025	0,100	170,266	0,002	65,824
5+3,550	1,961	0,000					
			0,495	1,956	172,222	0,000	65,824
5+4,540	1,990	0,000					
			2,404	10,128	182,350	0,000	65,824
5+9,348	2,223	0,000					
			2,926	12,198	194,548	0,000	65,824
5+15,200	1,946	0,000					
			0,025	0,107	194,655	0,002	65,826
5+15,250	2,346	0,099					
			2,375	11,115	205,770	0,456	66,282
6	2,334	0,093					
			10,000	47,470	253,240	1,190	67,472
7	2,413	0,026					
			10,000	41,860	295,100	2,350	69,822
8	1,773	0,209					
			2,270	7,280	302,380	1,773	71,595
8+4,540	1,434	0,572					
			0,537	1,544	303,924	0,628	72,223
8+5,613	1,444	0,598					
			7,194	20,027	323,951	8,100	80,323
9	1,340	0,528					
			10,000	31,050	355,001	8,920	89,243
10	1,765	0,364					
			2,807	10,479	365,480	1,864	91,107
10+5,613	1,969	0,300					
			3,694	18,227	383,707	2,349	93,456
10+13,000	2,966	0,336					

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Estaca	Área Corte	Área Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
10+13,000	2,966	0,336					
			0,025	0,132	383,839	0,008	93,464
10+13,050	2,311	0,000					
			1,957	8,632	392,471	0,000	93,464
10+16,963	2,101	0,000					
			1,519	6,353	398,824	0,000	93,464
11	2,083	0,000					
			0,145	0,572	399,396	0,000	93,464
11+0,290	1,860	0,000					
			0,030	0,126	399,522	0,018	93,482
11+0,350	2,326	0,615					
			2,543	13,323	412,845	1,767	95,249
11+5,436	2,913	0,080					
			3,662	21,994	434,839	0,743	95,992
11+12,760	3,093	0,123					
			3,620	23,255	458,094	0,634	96,626
12	3,331	0,052					
			10,000	113,370	571,464	0,520	97,146
13	8,006	0,000					
			6,928	96,431	667,895	0,166	97,312
13+13,855	5,914	0,024					
			3,073	18,171	686,066	25,665	122,977
14	0,000	8,329					
			6,380	0,000	686,066	274,697	397,674
14+12,760	0,000	34,727					
			3,620	0,000	686,066	227,448	625,122
15	0,000	28,104					
			5,298	0,000	686,066	255,856	880,978
15+10,596	0,000	20,189					

	Corte	Aterro
Áreas	79,2380 m <sup>2</sup>	102,395 m <sup>2</sup>
Volumes	686,066 m <sup>3</sup>	880,978 m <sup>3</sup>

Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área Corte	Área Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
0+3,500	2,223	0,010					
			2,752	13,460	13,460	0,028	0,028
0+9,004	2,668	0,000					
			5,498	18,193	31,653	7,763	7,791
1	0,641	1,412					
			10,000	25,070	56,723	18,950	26,741
2	1,866	0,483					
			4,488	20,537	77,260	3,779	30,520
2+8,976	2,710	0,359					
			5,512	28,927	106,187	2,602	33,122
3	2,538	0,113					
			4,817	21,626	127,813	0,944	34,066
3+9,633	1,952	0,083					
			4,930	19,050	146,863	0,444	34,510
3+19,493	1,912	0,007					
			0,254	0,981	147,844	0,005	34,515
4	1,959	0,012					
			10,000	41,470	189,314	2,240	36,755
5	2,188	0,212					
			2,993	11,891	201,205	1,272	38,027
5+5,986	1,785	0,213					
			4,383	15,945	217,150	1,429	39,456
5+14,752	1,853	0,113					
			2,624	10,333	227,483	0,493	39,949
6	2,085	0,075					
			0,160	0,670	228,153	0,024	39,973
6+0,320	2,104	0,072					
			9,840	43,257	271,410	1,771	41,744
7	2,292	0,108					
			5,837	23,132	294,542	1,757	43,501
7+11,674	1,671	0,193					
			4,138	15,319	309,861	0,886	44,387
7+19,950	2,031	0,021					
			0,025	0,096	309,957	0,001	44,388
8	1,827	0,000					
			3,500	12,821	322,778	0,000	44,388
8+7,000	1,836	0,000					
			0,025	0,090	322,868	0,001	44,389
8+7,050	1,765	0,057					
			6,475	21,808	344,676	2,325	46,714
9	1,603	0,302					
			10,000	34,080	378,756	3,820	50,534
10	1,805	0,080					
			7,062	24,369	403,125	1,215	51,749
10+14,123	1,646	0,092					
			2,939	9,459	412,584	0,664	52,413
11	1,573	0,134					
			5,000	14,280	426,864	1,965	54,378
11+10,000	1,283	0,259					

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Estaca	Área Corte	Área Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
11+10,000	1,283	0,259					
			0,025	0,064	426,928	0,008	54,386
11+10,050	1,293	0,063					
			2,222	5,275	432,203	0,396	54,782
11+14,494	1,081	0,115					
			1,753	3,536	435,739	0,431	55,213
11+18,000	0,936	0,131					
			0,040	0,074	435,813	0,022	55,235
11+18,080	0,917	0,425					
			0,960	1,692	437,505	0,841	56,076
12	0,845	0,451					
			5,450	9,063	446,568	6,006	62,082
12+10,900	0,818	0,651					
			0,025	0,041	446,609	0,030	62,112
12+10,950	0,829	0,540					
			3,550	6,923	453,532	3,674	65,786
12+18,050	1,121	0,495					
			0,975	2,812	456,344	0,893	66,679
13	1,763	0,421					
			10,000	37,800	494,144	6,250	72,929
14	2,017	0,204					
			10,000	44,560	538,704	2,570	75,499
15	2,439	0,053					
			1,225	5,313	544,017	0,174	75,673
15+2,450	1,898	0,089					
			0,025	0,095	544,112	0,002	75,675
15+2,500	1,918	0,000					
			1,983	8,669	552,781	0,000	75,675
15+6,465	2,455	0,000					
			0,226	1,083	553,864	0,000	75,675
15+6,916	2,348	0,000					
			0,941	4,022	557,886	0,000	75,675
15+8,798	1,926	0,000					
			1,101	3,914	561,800	0,000	75,675
15+11,000	1,629	0,000					
			0,025	0,082	561,882	0,003	75,678
15+11,050	1,634	0,137					
			4,475	16,441	578,323	0,837	76,515
16	2,040	0,050					
			10,000	46,890	625,213	0,500	77,015
17	2,649	0,000					
			8,294	41,130	666,343	0,000	77,015
17+16,588	2,310	0,000					
			1,706	7,648	673,991	0,000	77,015
18	2,173	0,000					
			8,850	42,108	716,099	0,000	77,015
18+17,700	2,585	0,000					
			0,025	0,122	716,221	0,000	77,015
18+17,750	2,299	0,000					

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18+17,750	2,299	0,000					
			1,125	5,146	721,367	0,000	77,015
19	2,275	0,000					
			1,144	5,202	726,569	0,000	77,015
19+2,287	2,274	0,000					

	Corte	Aterro
Áreas	94,2880 m <sup>2</sup>	8,235 m <sup>2</sup>
Volumes	726,569 m <sup>3</sup>	77,015 m <sup>3</sup>

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Estaca	Área Corte	Área Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
0+3,500	1,385	0,608					
			2,764	7,268	7,268	3,015	3,015
0+9,027	1,245	0,483					
			0,794	2,030	9,298	0,757	3,772
0+10,615	1,312	0,471					
			4,693	17,339	26,637	2,496	6,268
1	2,383	0,061					
			10,000	53,180	79,817	0,610	6,878
2	2,935	0,000					
			2,256	12,232	92,049	0,059	6,937
2+4,512	2,487	0,026					
			7,744	33,067	125,116	3,833	10,770
3	1,783	0,469					
			3,500	14,710	139,826	3,164	13,934
3+7,000	2,420	0,435					
			0,050	0,216	140,042	0,022	13,956
3+7,100	1,905	0,000					
			0,461	1,782	141,824	0,000	13,956
3+8,022	1,960	0,000					
			1,377	5,732	147,556	0,000	13,956
3+10,776	2,203	0,000					
			1,123	4,493	152,049	0,000	13,956
3+13,022	1,798	0,000					
			0,627	2,233	154,282	0,000	13,956
3+14,276	1,763	0,000					
			0,712	2,525	156,807	0,000	13,956
3+15,700	1,784	0,000					
			0,025	0,094	156,901	0,012	13,968
3+15,750	1,966	0,479					
			2,125	8,135	165,036	1,762	15,730
4	1,862	0,350					
			0,339	1,287	166,323	0,230	15,960
4+0,677	1,939	0,330					
			6,251	25,515	191,838	3,425	19,385
4+13,178	2,143	0,218					
			3,411	14,203	206,041	1,313	20,698
5	2,021	0,167					
			10,000	36,970	243,011	3,580	24,278
6	1,676	0,191					
			2,867	9,203	252,214	1,304	25,582
6+5,734	1,534	0,264					
			6,341	22,574	274,788	2,124	27,706
6+18,416	2,026	0,071					
			0,742	2,915	277,703	0,055	27,761
6+19,900	1,903	0,003					
			0,050	0,189	277,892	0,000	27,761
7	1,873	0,000					
			1,628	7,042	284,934	0,000	27,761
7+3,255	2,454	0,000					

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Estaca	Área Corte	Área Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
7+3,255	2,454	0,000					
			2,123	10,150	295,084	0,000	27,761
7+7,500	2,328	0,000					
			0,025	0,126	295,210	0,000	27,761
7+7,550	2,713	0,017					
			2,465	11,975	307,185	0,200	27,961
7+12,479	2,146	0,064					
			3,761	15,204	322,389	0,733	28,694
8	1,897	0,131					
			10,000	37,510	359,899	1,870	30,564
9	1,854	0,056					
			10,000	40,160	400,059	0,970	31,534
10	2,162	0,041					
			10,000	45,530	445,589	0,570	32,104
11	2,391	0,016					
			6,500	27,801	473,390	1,905	34,009
11+13,000	1,886	0,277					
			0,015	0,055	473,445	0,004	34,013
11+13,030	1,767	0,000					
			1,570	6,127	479,572	0,000	34,013
11+16,169	2,137	0,000					

	Corte	Aterro
Áreas	70,0410 m <sup>2</sup>	5,228 m <sup>2</sup>
Volumes	479,572 m <sup>3</sup>	34,013 m <sup>3</sup>



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Estaca	Área Corte	Área Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
0	2.988	0.102					
			5.500	34.425	34.425	1.012	1.012
0+11,000	3.271	0.082					
			0.025	0.166	34.591	0.002	1.014
0+11,050	3.369	0.012					
			4.475	29.271	63.862	1.204	2.218
1	3.172	0.257					
			2.350	13.477	77.339	1.354	3.572
1+4,700	2.563	0.319					
			0.025	0.126	77.465	0.023	3.595
1+4,750	2.487	0.594					
			2.573	11.821	89.286	2.681	6.276
1+9,895	2.108	0.448					
			5.053	20.266	109.552	4.734	11.010
2	1.903	0.489					
			0.417	1.617	111.169	0.400	11.410
2+0,833	1.979	0.472					
			2.084	9.405	120.574	1.321	12.731
2+5,000	2.535	0.162					
			2.500	16.348	136.922	0.560	13.291
2+10,000	4.004	0.062					
			2.500	23.598	160.520	0.155	13.446
2+15,000	5.435	0.000					
			1.498	16.835	177.355	0.376	13.822
2+17,996	5.803	0.251					
			1.002	11.618	188.973	0.648	14.470
3	5.792	0.396					
			5.492	46.919	235.892	6.370	20.840
3+10,983	2.752	0.764					
			4.509	23.422	259.314	8.557	29.397
4	2.443	1.134					
			5.557	22.482	281.796	19.576	48.973
4+11,113	1.603	2.389					
			3.081	8.896	290.692	13.964	62.937
4+17,274	1.285	2.144					
			1.363	2.939	293.631	5.922	68.859
5	0.871	2.201					
			2.500	3.675	297.306	12.180	81.039
5+5,000	0.599	2.671					
			2.500	1.498	298.804	16.612	97.651
5+10,000	0.000	3.974					
			2.500	0.000	298.804	20.843	118.494
5+15,000	0.000	4.363					
			0.255	0.000	298.804	2.208	120.702
5+15,509	0.000	4.312					
			2.246	0.793	299.597	18.905	139.607
6	0.353	4.107					
			10.000	15.390	314.987	84.780	224.387
7	1.186	4.371					

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Estaca	Área Corte	Área Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
7	1.186	4.371					
			4.106	5.157	320.144	40.198	264.585
7+8,212	0.070	5.419					
			5.894	0.413	320.557	78.962	343.547
8	0.000	7.978					
			2.500	0.000	320.557	40.207	383.754
8+5,000	0.000	8.105					
			2.500	0.000	320.557	41.440	425.194
8+10,000	0.000	8.471					
			2.500	0.000	320.557	30.915	456.109
8+15,000	0.000	3.895					
			2.500	2.988	323.545	12.205	468.314
9	1.195	0.987					
			0.161	0.405	323.950	0.303	468.617
9+0,322	1.321	0.897					
			5.297	32.063	356.013	4.751	473.368
9+10,916	4.732	0.000					
			0.515	4.923	360.936	0.000	473.368
9+11,945	4.837	0.000					
			0.478	4.702	365.638	0.000	473.368
9+12,900	5.010	0.000					
			0.025	0.247	365.885	0.000	473.368
9+12,950	4.851	0.000					
			3.525	34.919	400.804	0.021	473.389
10	5.055	0.006					
			2.300	21.963	422.767	0.069	473.458
10+4,600	4.494	0.024					
			0.025	0.234	423.001	0.001	473.459
10+4,650	4.871	0.023					
			2.843	24.583	447.584	0.324	473.783
10+10,336	3.776	0.091					
			0.832	5.988	453.572	0.212	473.995
10+11,999	3.426	0.164					
			4.001	21.315	474.887	4.093	478.088
11	1.902	0.859					
			3.565	8.811	483.698	9.938	488.026
11+7,129	0.570	1.929					
			4.893	10.637	494.335	17.732	505.758
11+16,915	1.604	1.695					
			1.543	5.001	499.336	4.794	510.552
12	1.638	1.413					
			10.000	39.570	538.906	29.030	539.582
13	2.319	1.490					
			1.797	7.806	546.712	4.827	544.409
13+3,593	2.026	1.197					
			5.085	24.444	571.156	6.814	551.223
13+13,763	2.781	0.143					
			3.119	23.133	594.289	0.446	551.669
14	4.637	0.000					

## Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área Corte	Área Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
14	4.637	0.000					
			0.020	0.177	594.466	0.000	551.669
14+0,040	4.210	0.000					
			3.099	33.501	627.967	0.000	551.669
14+6,237	6.602	0.000					
			1.882	22.544	650.511	0.000	551.669
14+10,000	5.380	0.000					
			0.025	0.281	650.792	0.000	551.669
14+10,050	5.878	0.000					
			4.815	40.562	691.354	1.940	553.609
14+19,680	2.546	0.403					

	Corte	Aterro
Áreas	144.2320 m <sup>2</sup>	81.265 m <sup>2</sup>
Volumes	691.354 m <sup>3</sup>	553.609 m <sup>3</sup>

Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área Corte	Área Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
0+3.500	1,291	0,248					
			8,250	24,255	24,255	2,871	2,871
1	1,649	0,100					
			4,455	14,575	38,830	1,608	4,479
1+8.909	1,623	0,261					
			5,546	16,875	55,705	5,889	10,368
2	1,420	0,801					
			4,455	12,045	67,750	7,626	17,994
2+8.909	1,284	0,911					
			5,546	12,805	80,555	11,341	29,335
3	1,025	1,134					
			10,000	18,720	99,275	18,840	48,175
4	0,847	0,750					
			10,000	19,540	118,815	15,370	63,545
5	1,107	0,787					
			10,000	20,190	139,005	13,970	77,515
6	0,912	0,610					
			10,000	20,710	159,715	11,580	89,095
7	1,159	0,548					
			5,082	12,231	171,946	5,061	94,156
7+10.163	1,248	0,448					
			4,919	11,755	183,701	3,172	97,328
8	1,142	0,197					
			0,842	1,913	185,614	0,337	97,665
8+1.683	1,131	0,203					
			9,159	20,771	206,385	4,359	102,024
9	1,137	0,273					
			0,842	1,928	208,313	0,475	102,499
9+1.683	1,154	0,291					
			9,159	26,834	235,147	4,918	107,417
10	1,776	0,246					

	Corte	Aterro
Áreas	19,9050 m²	7,808 m²
Volumes	235,147 m3	107,417 m3

## Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área Corte	Área Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
0+3,000	1,764	0,088					
			8,500	32,521	32,521	0,867	0,867
1	2,062	0,014					
			10,000	44,820	77,341	0,140	1,007
2	2,420	0,000					
			1,577	6,445	83,786	0,095	1,102
2+3,154	1,667	0,060					
			8,423	21,310	105,096	2,729	3,831
3	0,863	0,264					
			10,000	48,570	153,666	2,640	6,471
4	3,994	0,000					
			1,577	13,458	167,124	0,000	6,471
4+3,154	4,540	0,000					
			8,423	63,434	230,558	1,466	7,937
5	2,991	0,174					
			5,182	21,977	252,535	3,643	11,580
5+10,364	1,250	0,529					
			0,996	2,283	254,818	1,191	12,771
5+12,356	1,042	0,667					
			3,822	5,225	260,043	13,790	26,561
6	0,325	2,941					
			10,000	9,050	269,093	41,840	68,401
7	0,580	1,243					
			5,182	6,281	275,374	9,390	77,791
7+10,364	0,632	0,569					
			4,818	4,808	280,182	7,767	85,558
8	0,366	1,043					
			0,444	0,316	280,498	0,963	86,521
8+0,887	0,347	1,129					
			9,557	16,561	297,059	17,670	104,191
9	1,386	0,720					
			4,865	18,145	315,204	3,502	107,693
9+9,729	2,344	0,000					
			1,121	5,643	320,847	0,000	107,693
9+11,971	2,690	0,000					
			3,034	15,683	336,530	0,000	107,693
9+18,039	2,479	0,000					
			0,981	4,791	341,321	0,000	107,693
10	2,407	0,000					
			10,000	35,570	376,891	7,880	115,573
11	1,150	0,788					
			10,000	30,610	407,501	28,640	144,213
12	1,911	2,076					
			3,454	13,141	420,642	14,118	158,331
12+6,907	1,894	2,012					
			6,547	25,918	446,560	22,448	180,779
13	2,065	1,417					
			10,000	34,350	480,910	44,580	225,359
14	1,370	3,041					

## Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área Corte	Área Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
14	1,370	3,041					
			10,000	24,370	505,280	74,380	299,739
15	1,067	4,397					
			10,000	24,810	530,090	76,890	376,629
16	1,414	3,292					
			10,000	36,910	567,000	50,060	426,689
17	2,277	1,714					
			10,000	38,640	605,640	78,060	504,749
18	1,587	6,092					
			10,000	33,350	638,990	119,160	623,909
19	1,748	5,824					
			10,000	37,880	676,870	89,300	713,209
20	2,040	3,106					
			5,000	20,120	696,990	33,480	746,689
20+10,000	1,984	3,590					
			0,025	0,100	697,090	0,090	746,779
20+10,050	2,024	0,000					
			1,917	7,831	704,921	0,000	746,779
20+13,884	2,061	0,000					
			1,558	6,408	711,329	0,000	746,779
20+17,000	2,052	0,000					
			0,025	0,104	711,433	0,005	746,784
20+17,050	2,120	0,184					
			1,475	6,068	717,501	7,301	754,085
21	1,994	4,766					
			3,364	14,374	731,875	16,033	770,118
21+6,728	2,279	0,000					

	Corte	Aterro
Áreas	69,1860 m²	51,740 m²
Volumes	731,875 m³	770,118 m³

## Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área Corte	Área Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
0+3,500	2,862	0,658					
			8,250	31,400	31,400	14,388	14,388
1	0,944	1,086					
			10,000	10,780	42,180	23,980	38,368
2	0,134	1,312					
			10,000	17,990	60,170	14,930	53,298
3	1,665	0,181					
			9,212	49,432	109,602	1,667	54,965
3+18,424	3,701	0,000					
			0,788	5,811	115,413	0,024	54,989
4	3,674	0,030					
			10,000	64,790	180,203	1,230	56,219
5	2,805	0,093					
			8,472	46,028	226,231	1,508	57,727
5+16,944	2,628	0,085					
			1,528	7,831	234,062	0,535	58,262
6	2,497	0,265					
			10,000	43,250	277,312	3,380	61,642
7	1,828	0,073					
			10,000	51,440	328,752	0,730	62,372
8	3,316	0,000					
			10,000	59,260	388,012	0,000	62,372
9	2,610	0,000					
			10,000	37,880	425,892	3,460	65,832
10	1,178	0,346					
			10,000	17,830	443,722	7,210	73,042
11	0,605	0,375					
			10,000	24,220	467,942	4,300	77,342
12	1,817	0,055					
			7,769	30,043	497,985	0,715	78,057
12+15,538	2,050	0,037					
			2,231	9,573	507,558	0,125	78,182
13	2,241	0,019					
			10,000	47,570	555,128	0,190	78,372
14	2,516	0,000					
			1,475	7,789	562,917	0,000	78,372
14+2,950	2,765	0,000					
			0,025	0,138	563,055	0,000	78,372
14+3,000	2,762	0,000					
			0,950	5,161	568,216	0,883	79,255
14+4,900	2,671	0,929					
			0,950	0,000	568,216	0,000	79,255
14+7,250	0,000	0,000					
			0,950	0,000	568,216	0,000	79,255
14+8,018	0,000	0,000					
			0,950	0,000	568,216	0,000	79,255
14+10,000	2,491	0,069					
			0,025	0,124	568,340	0,004	79,259
14+10,050	2,480	0,071					

## Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área Corte	Área Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
14+10,050	2,480	0,071					
			4,975	22,552	590,892	0,696	79,955
15	2,053	0,069					
			10,000	42,650	633,542	7,930	87,885
16	2,212	0,724					
			10,000	41,780	675,322	8,290	96,175
17	1,966	0,105					
			10,000	27,190	702,512	10,750	106,925
18	0,753	0,970					
			10,000	22,150	724,662	10,310	117,235
19	1,462	0,061					
			10,000	38,080	762,742	0,640	117,875
20	2,346	0,003					
			10,000	49,500	812,242	0,030	117,905
21	2,604	0,000					
			3,125	15,597	827,839	0,341	118,246
21+6,250	2,387	0,109					
			0,020	0,096	827,935	0,004	118,250
21+6,290	2,406	0,103					
			0,020	0,000	827,935	0,000	118,250
21+6,300	0,000	0,000					
			0,020	0,000	827,935	0,000	118,250
21+8,180	0,000	0,000					
			0,020	0,000	827,935	0,000	118,250
21+9,500	0,000	0,000					
			0,020	0,000	827,935	0,000	118,250
21+10,074	0,000	0,000					
			0,020	0,000	827,935	0,000	118,250
21+12,690	2,335	0,013					
			0,030	0,139	828,074	0,001	118,251
21+12,750	2,314	0,013					
			0,025	0,115	828,189	0,001	118,252
21+12,800	2,294	0,013					
			3,600	12,751	840,940	0,353	118,605
22	1,248	0,085					
			10,000	28,160	869,100	3,490	122,095
23	1,568	0,264					
			6,538	24,313	893,413	4,517	126,612
23+13,075	2,151	0,427					
			3,463	14,134	907,547	2,742	129,354
24	1,931	0,365					
			10,000	32,050	939,597	6,490	135,844
25	1,274	0,284					
			2,280	6,571	946,168	0,657	136,501
25+4,560	1,608	0,004					
			7,720	23,307	969,475	0,409	136,910
26	1,411	0,049					
			10,000	30,190	999,665	0,570	137,480
27	1,608	0,008					



## Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área Corte	Área Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
27	1,608	0,008					
			6,538	22,482	1.022,147	0,255	137,735
27+13,075	1,831	0,031					
			3,463	12,742	1.034,889	0,336	138,071
28	1,849	0,066					
			10,000	38,120	1.073,009	2,290	140,361
29	1,963	0,163					
			10,000	38,510	1.111,519	2,550	142,911
30	1,888	0,092					
			10,000	42,770	1.154,289	1,540	144,451
31	2,389	0,062					
			8,500	36,083	1.190,372	2,304	146,755
31+17,000	1,856	0,209					
			0,065	0,239	1.190,611	0,026	146,781
31+17,130	1,826	0,184					
			0,005	0,018	1.190,629	0,002	146,783
31+17,140	1,819	0,181					
			0,005	0,000	1.190,629	0,000	146,783
31+17,150	0,000	0,000					
			0,005	0,000	1.190,629	0,000	146,783
32	0,000	0,000					
			0,005	0,000	1.190,629	0,000	146,783
32+0,670	0,000	0,000					
			0,005	0,000	1.190,629	0,000	146,783
32+0,678	0,000	0,000					
			0,005	0,000	1.190,629	0,000	146,783
32+4,000	0,000	0,000					
			0,005	0,000	1.190,629	0,000	146,783
32+4,100	0,000	0,000					
			0,005	0,000	1.190,629	0,000	146,783
32+4,140	2,447	0,000					
			0,005	0,024	1.190,653	0,000	146,783
32+4,150	2,446	0,000					
			2,571	12,557	1.203,210	0,000	146,783
32+9,291	2,439	0,000					
			5,355	23,790	1.227,000	0,000	146,783
33	2,004	0,000					
			9,646	30,161	1.257,161	0,868	147,651
33+19,291	1,123	0,090					
			0,355	0,793	1.257,954	0,067	147,718
34	1,115	0,100					
			10,000	28,560	1.286,514	2,300	150,018
35	1,741	0,130					
			10,000	39,570	1.326,084	1,380	151,398
36	2,216	0,008					
			10,000	37,760	1.363,844	1,280	152,678
37	1,560	0,120					
			4,646	16,115	1.379,959	0,585	153,263
37+9,291	1,909	0,006					

## Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área Corte	Área Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
37+9,291	1,909	0,006					
			5,355	24,577	1.404,536	0,032	153,295
38	2,681	0,000					
			10,000	51,620	1.456,156	0,010	153,305
39	2,481	0,001					
			10,000	48,210	1.504,366	0,010	153,315
40	2,340	0,000					
			2,520	13,071	1.517,437	0,000	153,315
40+5,040	2,847	0,000					

	Corte	Aterro
Áreas	134,9410 m <sup>2</sup>	10,796 m <sup>2</sup>
Volumes	1.517,437 m <sup>3</sup>	153,315 m <sup>3</sup>

## Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área Corte	Área Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
0+3,614	2,377	0,487					
			8,193	38,474	38,474	6,186	6,186
1	2,319	0,268					
			2,459	12,029	50,503	1,111	7,297
1+4,917	2,574	0,184					
			7,542	40,324	90,827	2,707	10,004
2	2,773	0,175					
			2,601	14,677	105,504	0,668	10,672
2+5,201	2,871	0,082					
			0,554	3,185	108,689	0,087	10,759
2+6,308	2,884	0,075					
			1,846	10,716	119,405	0,369	11,128
2+10,000	2,921	0,125					
			0,025	0,146	119,551	0,004	11,132
2+10,050	2,904	0,027					
			4,975	30,432	149,983	0,229	11,361
3	3,213	0,019					
			3,114	19,151	169,134	0,399	11,760
3+6,227	2,938	0,109					
			2,887	16,395	185,529	0,647	12,407
3+12,000	2,742	0,115					
			0,025	0,137	185,666	0,010	12,417
3+12,050	2,741	0,275					
			3,975	20,638	206,304	6,404	18,821
4	2,451	1,336					
			10,000	64,340	270,644	15,590	34,411
5	3,983	0,223					
			10,000	78,750	349,394	3,450	37,861
6	3,892	0,122					
			10,000	65,660	415,054	3,170	41,031
7	2,674	0,195					
			10,000	59,240	474,294	4,160	45,191
8	3,250	0,221					
			9,399	80,385	554,679	2,077	47,268
8+18,797	5,303	0,000					
			0,602	6,489	561,168	0,000	47,268
9	5,485	0,000					
			1,750	20,277	581,445	0,000	47,268
9+3,500	6,102	0,000					
			0,025	0,286	581,731	0,000	47,268
9+3,550	5,339	0,000					
			2,400	26,587	608,318	0,000	47,268
9+8,350	5,739	0,000					
			0,025	0,305	608,623	0,000	47,268
9+8,400	6,466	0,000					
			5,800	78,810	687,433	0,000	47,268
10	7,122	0,000					
			10,000	140,880	828,313	0,000	47,268
11	6,966	0,000					

## Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área Corte	Área Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
11	6,966	0,000					
			10,000	125,960	954,273	0,000	47,268
12	5,630	0,000					
			10,000	89,570	1.043,843	1,860	49,128
13	3,327	0,186					
			3,850	23,889	1.067,732	1,759	50,887
13+7,700	2,878	0,271					
			0,025	0,142	1.067,874	0,014	50,901
13+7,750	2,810	0,270					
			3,008	17,468	1.085,342	1,432	52,333
13+13,765	2,998	0,206					
			1,318	8,071	1.093,413	0,452	52,785
13+16,400	3,128	0,137					
			0,025	0,159	1.093,572	0,007	52,792
13+16,450	3,213	0,134					
			1,775	11,433	1.105,005	0,548	53,340
14	3,228	0,175					
			10,000	71,440	1.176,445	1,830	55,170
15	3,916	0,008					
			10,000	98,370	1.274,815	0,080	55,250
16	5,921	0,000					
			10,000	129,860	1.404,675	0,000	55,250
17	7,065	0,000					
			10,000	127,780	1.532,455	0,000	55,250
18	5,713	0,000					
			10,000	86,960	1.619,415	3,900	59,150
19	2,983	0,390					
			4,574	20,540	1.639,955	6,106	65,256
19+9,147	1,508	0,945					
			5,427	20,827	1.660,782	9,914	75,170
20	2,330	0,882					
			10,000	55,630	1.716,412	11,060	86,230
21	3,233	0,224					
			3,400	23,868	1.740,280	1,000	87,230
21+6,800	3,787	0,070					
			0,075	0,533	1.740,813	0,011	87,241
21+6,950	3,324	0,073					
			1,618	10,981	1.751,794	0,340	87,581
21+10,186	3,463	0,137					
			2,832	18,983	1.770,777	1,124	88,705
21+15,850	3,240	0,260					
			0,025	0,167	1.770,944	0,013	88,718
21+15,900	3,448	0,262					
			2,050	13,368	1.784,312	1,343	90,061
22	3,073	0,393					
			0,296	1,836	1.786,148	0,226	90,287
22+0,591	3,139	0,373					
			9,705	62,274	1.848,422	5,764	96,051
23	3,278	0,221					

## Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área Corte	Área Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
23	3,278	0,221					
			10,000	71,880	1.920,302	6,440	102,491
24	3,910	0,423					
			10,000	85,210	2.005,512	5,150	107,641
25	4,611	0,092					
			10,000	82,810	2.088,322	2,020	109,661
26	3,670	0,110					
			10,000	82,170	2.170,492	8,370	118,031
27	4,547	0,727					
			10,000	86,850	2.257,342	8,840	126,871
28	4,138	0,157					
			10,000	77,610	2.334,952	8,310	135,181
29	3,623	0,674					
			0,025	0,181	2.335,133	0,017	135,198
29+0,050	3,624	0,000					
			4,275	33,289	2.368,422	0,000	135,198
29+8,600	4,163	0,000					
			0,025	0,189	2.368,611	0,000	135,198
29+8,650	3,391	0,000					
			0,007	0,044	2.368,655	0,000	135,198
29+8,663	3,378	0,000					
			2,319	17,296	2.385,951	0,000	135,198
29+13,300	4,082	0,000					
			0,024	0,196	2.386,147	0,000	135,198
29+13,348	4,073	0,000					
			0,001	0,008	2.386,155	0,000	135,198
29+13,350	4,095	0,493					
			1,825	13,903	2.400,058	1,657	136,855
29+17,000	3,523	0,415					
			0,025	0,177	2.400,235	0,021	136,876
29+17,050	3,548	0,434					
			1,475	10,434	2.410,669	1,096	137,972
30	3,526	0,309					
			10,000	75,980	2.486,649	8,220	146,192
31	4,072	0,513					
			1,397	11,384	2.498,033	1,484	147,676
31+2,793	4,080	0,550					
			8,604	68,381	2.566,414	8,862	156,538
32	3,868	0,480					
			10,000	63,860	2.630,274	16,500	173,038
33	2,518	1,170					
			10,000	47,100	2.677,374	24,240	197,278
34	2,192	1,254					
			0,750	3,598	2.680,972	1,814	199,092
34+1,500	2,605	1,165					
			0,025	0,120	2.681,092	0,029	199,121
34+1,550	2,190	0,000					
			1,612	8,192	2.689,284	0,000	199,121
34+4,774	2,892	0,000					

Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

	Corte	Aterro
Áreas	270,9810 m²	18,621 m²
Volumes	2.689,284 m3	199,121 m3